# Natural Resources Review

ISSUE 14 SPRING 2013

KENTUCKY DEPARTMENT FOR NATURAL RESOURCES

**OUR MISSION:** To improve the quality of life for all Kentuckians by protecting our land, air, and water resources; utilizing our natural resources in an environmentally conscientious manner; and creating efficient environmentally responsible ways of managing, conserving and sustaining our resources for future generations.





### **Commissioner's Corner**

By Steve Hohmann, Commissioner Department for Natural Resources

Dear Employees, Colleagues, and Friends,

Welcome to the first issue of the Department for Natural Resources (DNR) newsletter for 2013. I hope you enjoy this issue's articles concerning some of the important events that have occurred in the department since the beginning of 2013.

As we wind down Fiscal Year 2013 (FY13), DNR continues the difficult task of addressing budget shortfalls in several of our divisions. The most significant ramification thus far has been the reorganization of the Division of Forestry. With a budget shortfall in FY13 exceeding \$1 million, their nine district offices have been transformed into five regional offices along with a major restructuring of the Frankfort central office. This realignment was effective February 16 and the division is well into full implementation. I want to commend all Forestry employees for the highly professional manner in which they have adjusted to this difficult situation.

In the mining arena, Governor Beshear signed House Bill 66, which establishes a state-wide reclamation guaranty fund for all coal operations in the Commonwealth. The reclamation fund, supported by industry fees, will serve as a bond pool that provides additional funds in the event the bond for a forfeited mining permit is insufficient to complete reclamation. The legislation was the second action of a two-part strategy by DNR to address the concerns of the federal Office of Surface Mining (OSM) regarding Kentucky's reclamation bonding program for coal. As an immediate corrective action, DNR submitted a regulation package aimed at increasing the amount of reclamation bond required for each permit. Approved in September 2012, this successful initiative increased the average amount of a coal mining bond by almost 60 percent and was an important step toward addressing our bonding problems. With the passage of HB 66, DNR is now focusing on developing a regulation package to implement its provisions.

This newsletter provides us an opportunity to highlight some of the accomplishments made by employees of DNR in recent months. Throughout all of the uncertainty we face, the employees of this department continue to achieve significant progress toward our goal of enhancing and protecting Kentucky's natural resources.

The Department for Natural Resources recently presented the "2012 Excellence in Reclamation Awards" to five companies operating in the Kentucky coalfields in recognition of the outstanding level of mining and reclamation activity conducted on their operations. Each of the five Division of Mine Reclamation and Enforcement (DMRE) regional field offices nominates a specific mine site that best exemplifies outstanding reclamation in their respective regional areas annually. Each regional office nomination undergoes a thorough and systematic review before being recognized by the department. Since mining operations are subjected to repeated inspection and scrutiny throughout the year to ensure compliance with all state and federal surface mining laws, the department feels it is equally as important to recognize those mining operations that exceed their reclamation obligations. During these award presentations, the department also recognizes the efforts of the DMRE inspection staff assigned to these operations. It is through the combined efforts of the company and the inspectors that these sites achieve a high level of reclamation excellence.



#### Pikeville Regional Office

The Excellence in Reclamation Award in the Pikeville area went to Deane Mining, LLC (permit no. 867 – 0478) for outstanding reclamation work on its surface mine located in Letcher County near the community of Mayking. While this site was originally issued to CONSOL of Kentucky in 1997, the permit was subsequently transferred to Deane Mining in 2008. The company has successfully established a beneficial post mining land use of "fish and wildlife habitat," which should prove very useful to wildlife in the local community for many years. The company's reclamation activity on Left to right: back row: Charles Holbrook, Glen Pope, Ron Hull, this 127-acre surface mining operation closely followed a set of revegetation plans that were specifically developed for the site.



Dennis Hatfield, Steve Hohmann, Mike Hansel. Front row: Ivan Whitaker, Deannie Castle and Brian Tussey.

The site was nominated by DMRE Pikeville Regional Office inspection personnel because of the company's outstanding reclamation work and its commitment to a healthy environment.



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Left to right- back row: Eric Allen, Kelly Short, Russ Moberly, Doug Bentley, Brian Patton, Steve Hohmann, Allen James. Front row: Gena Davenport, Regina Ison, Mitzi Harless, Greg Weddington.

#### Prestonsburg Regional Office

The Excellence in Reclamation Award in the Prestonsburg Regional Office went to Laurel Mountain Resources, LLC for the outstanding reclamation work on its surface mine (permit no. 880-0197) located in Martin County near the community of Tomahawk. Laurel Mountain Resources successfully established a beneficial post mining land use "hay land / pasture" in accordance with the landowners' wishes. The company's reclamation activity on this 257-acre surface mining operation closely followed a set of revegetation plans that were specifically developed for the site. This operation was nominated by DMRE Prestonsburg Regional Office inspection personnel because of the company's outstanding reclamation work and environmental stewardship.





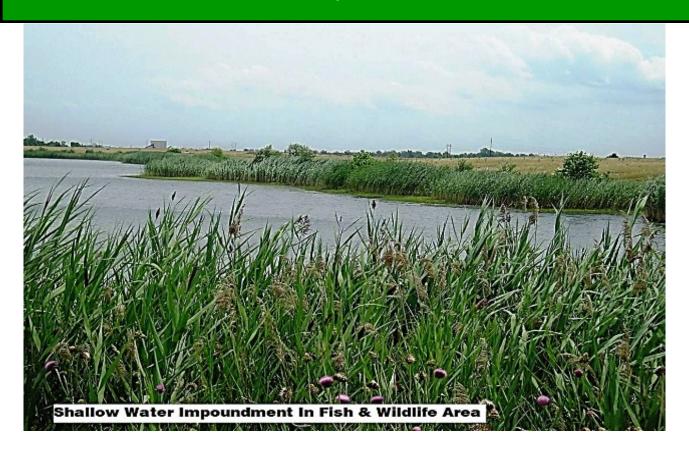
#### Middlesboro Regional Office

The Excellence in Reclamation Award in the Middlesboro Regional Office was presented to Xinergy Corp. for their outstanding reclamation work on permit no. 807-0362 located in Bell County near the community of Stoney Fork. The company successfully established a beneficial post mining land use of "fish and wildlife habitat" that should prove to be very useful to wildlife and the local community for many years. The company's reclamation activity on this 273-acre surface mining operation closely followed a detailed set of mining and reclamation

plans that were specifically developed for the site. The company also entered into an agreement with the Kentucky Department of Fish and Wildlife Resources to create a quail management area on the permit. It should also be noted that this area was chosen as part of the state's elk re-introduction effort and elk can now be observed grazing throughout the site. Deer and turkey also make extensive use of the site.



Left to right: back row - Marvin Hammock, Bruce Cowan, John Leddington, Steve Hohmann, Tom Crockett; front row: Scott Cox, Bill McDowell, Larry Gulley.



#### Madisonville Regional Office

The Excellence in Reclamation Award in the Madisonville Regional Office was presented to Hopkins County Coal, LLC for their outstanding reclamation work on permit no. 854 -0216 located in Hopkins County near the community of Madisonville. Hopkins County Coal successfully established diverse post-mining land uses that include "hay land/pasture," "fish and wildlife habitat," permanent open water impoundments, stream restoration (Little Flat Creek) and several seasonal shallow water depressions. The company's mining and reclamation activity on this 318-acre surface mining operation closely followed a detailed set of plans specifically developed for the site. The site was nominated by DMRE Madisonville Regional Office inspection personnel because of the company's outstanding reclamation work and its continued commitment to environmental stewardship. Also attending the event were Sen. Jerry Rhoads and Rep. Ben Waide. Rep. Waide presented the company with a Kentucky House of Representatives Citation during the awards ceremony.



Left to right: Greg Logston, Lee Harris, Steve Hohmann, Kiah Winstead, Robert Yonts and Daniel Eizenga



Left to right - Rep. Ben Waide, Kiah Winstead, Lee Harris and Sen. Jerry Rhoads

#### **London Regional Office**

Excellence The Reclamation Award in the London Regional Area was presented to T&T Coal, Inc. for outstanding reclamation work on surface mine (permit no. 855-0181) located in Jackson County near the community of Green Hall. T&T Coal, Inc. successfully established the combined post mining land uses of "hay land / pasture" and "forestland." The company's reclamation activity on this 111-acre surface min-



Left to right: Billy Cameron, Kevin Helton, Jessica Sandlin, Steve Hohmann, Clayton Nantz and Thor Cummins

ing operation closely followed a detailed set of mining and revegetation plans that were specifically developed for the site. The "hay land / pasture" land use was established in accordance with the landowners' wishes, and the "forestland" was established on portions of the permit area thus ensuring the site can support the endangered Indiana bat. The site was nominated by DMRE London Regional Office inspection personnel because of the company's outstanding reclamation work and its commitment to the environment.



### **Experimental Practice Permit Used for Building New School By Linda Fischer and Emily Lawson**

On Sept. 2, 2003, Perry Land and Development Inc. was issued a permit containing an experimental practice in Perry County, Kentucky. The experimental practice consisted of leaving unreclaimed highwall at the edges of the permitted area to maximize the level acreage for an industrial/commercial land use. The property fronts Kentucky Route 80 located northeast of the Daniel Boone Plaza in Hazard, Kentucky.

The permit was transferred to B & W Resources Inc. on Nov. 9, 2004. At this time, the mining was not completed according to the approved plan causing safety issues related to the retained highwalls. Several meetings and site visits occurred between the Division of Mine Permits (DMP), Office of Surface Mining (OSM), B & W Resources Inc. and R. M. Johnson Engineering Inc. to find a practical, safe solution to stabilize the remaining highwalls.



The impetus for a solution presented itself in the form of the Perry County Board of Education. While the post mining land use of the site was proposed as industrial/commercial at the time of permitting and mining, no specific entity had been envisioned for the site. However, the Perry County Board of Education had received a Qualified School Construction Bond grant set to expire on Dec. 31, 2011. The Board was looking for a site suitable for the new location of the Dennis Wooton Elementary School that could be purchased and bonds sold prior to the December expiration date. Begley Properties, the owners of the property being mined, negotiated with the Board to buy a portion of the property fronting Kentucky Route 80.

In order for the Board to purchase the property and move forward with the construction of the new school, it was imperative to resolve the safety issues regarding the highwalls remaining on the site. A plan was worked out among DMP, OSM, B & W Resources Inc. and R. M. Johnson Engineering Inc. A revision was submitted to the department on Oct. 26, 2011. This revision was placed on a fast review track and assigned to Keith Smith and Wes Jones.

Keith and Wes—through the cooperative review process and numerous site visits—were able to assist B & W Resources Inc. in receiving approval for their plan. The permit was approved on Nov. 29, 2011. Field work was completed and the property sold to the Perry County Board of Education. The construction of the school is now completed, with only interior work yet to be finished. The new Dennis Wooton Elementary School is scheduled to open in the fall of 2013.

### **The Trend Station Program**

Cumulative hydrologic impacts are the combined effects on water quality at a particular location in the hydrologic system caused by activities related to residential development, roads, agricultural, logging, mining, and oil and gas well operations. These locations, or trend stations, provide a measure of the cumulative effects of these activities and allow the ability to predict outcomes for each proposed mining operation in that watershed. DNR established these stations at the mouth of selected Hydrologic Unit Code (HUC)-12 watersheds to assist the Division of Mine Permits (DMP) in the development of their cumulative hydrologic impact assessments.

The federal Office of Surface Mining (OSM) provided \$470,060 for the trend station program to be spent for field sampling, associated supplies, and subsequent laboratory analysis. The parameters tested include those required by Surface Mining Control and Reclamation Act (SMCRA) monitoring regulations plus 24 other analytes, including selenium, aluminum and magnesium which may be associated with mining operations. All of the water quality analysis is performed by the Department for Environmental Protection's laboratory. This monitoring will aid in assessing the effects of coal mining in the state and provide water quality data to state and federal agencies, the coal industry, and the public. With EPA-approved sampling and laboratory methodologies, the data collected will meet the standards required for any federal/state agency inquiry and database sharing.





Trend Station: Hopkins County

Trend Station: Perry County

Phase I of the program has now been completed with four quarterly samples at 64 trend stations (53 east, 11 west) as well as the initial training of selected field personnel. The resulting water quality data is now available on the DNR website.

Currently in Phase II, the program provides for a year of sampling and analysis of an additional set of 69 locations in the coalfields, establishing a total of 133 trend stations. To date, three quarterly samplings have occurred.

Phase III will build upon lessons learned from the previous and current watershed studies and allow DNR to make necessary changes to the program, resulting in an improved regional water quality sampling and analysis system. Several trend stations may be deleted due to stream flow or safety issues or more stations added due to the need of more detailed sampling in very large watersheds. From previous laboratory analyses of the samples, several analytes may be deleted from the work specifications as they have not been detected in the previously collected water samples. The cost saving from deleted stations and a more focused chemical analysis of the samples will result in a more effective trend station network in the coalfields.

Though chemical analysis can often define the relative "health" of the watershed, a biological component can reveal the effects of the impact of certain analytes. Macro invertebrate surveys may provide additional information as to the condition of the stream. During the Phase III study, biological samples may be collected in mined and un-mined streams of targeted watersheds to supplement the chemical analyses and better gauge the effects of mining and the potential of any material damage. Additional source of funding for Phase III will be from court-ordered monetary judgments matched with OSM funds.

### Abandoned Mine Lands Twin Resources LLC Reclamation Project By Mark Meade

In 2008, the Kentucky Division of Abandoned Mine Lands (AML) Bond Forfeiture program received \$377,700 in available bond money for 179 acres of the Twin Resources LLC permit (864-0172) in southwestern Lawrence County. This permit was in need of reclamation to abate serious problems left behind by the permittee. In 2010, the Kentucky Division of Forestry (KDF) began to work with AML to locate a site to use federal Forest Stewardship competitive funds in the form of a grant called the Southern Appalachian Mixed Mesophytic Hardwood Restoration Coal Reclamation Initiative (SAMMI). This grant, funded by the U.S. Forest Service and worth up to \$100,000, was awarded to help reforest parts of Appalachia impacted by coal mining activities. After a diligent search was made for a landowner that wanted to have American chestnuts and hardwoods planted on their property, the Twin Resources permit was deemed a suitable site for a joint partnership. In April, 2012, KDF entered into a Memorandum of Agreement with AML to attempt reclamation of portions of the permit through reforestation.

KDF assisted AML in developing practice plans and maps for the site and the reclamation plan designated 21 acres for planting over 14,000 trees, including American chestnuts, white oak, black oak, chestnut oak, northern red oak, black locust and mixed hickories. Of particular importance are the American chestnuts, which once were numerous and important hardwoods found throughout the eastern United States, but were decimated by a fungus introduced into North America on imported Asiatic chestnut trees. The few surviving American chestnuts continue to be susceptible to this blight, but cross breeding with blight resistant Chinese chestnuts have allowed them to be reintroduced into the area. The 1,360 American chestnuts that will be planted will be monitored by the American Chestnut Foundation, who will collect seeds with the hope of creating a Kentucky variant of the American chestnut.

The reforestation aspect of the reclamation is divided into two parts. First, designated areas are to be cross-ripped to a minimum four foot depth. Cross-ripping is done by mounting a metal shank ripper to a large bulldozer and then running over the ground in a grid pattern of 8 feet by 8 feet. The soil compaction generally found on mines sites limits seedling growth, among other problems, so it was essential to create a suitable rooting medium to allow good tree growth. While ripping can initially be visually unpleasing, often resembling a "moonscape", ripping will allow for a much greater volume of soil to be available for the roots to expand into. The second part of the reforestation plan is to get the seedlings into the ground. Seedlings will come from KDF's Morgan County Nursery and with guidance from forestry personnel, will be hand-planted and protected from wildlife damage by the use of staked tree shelter tubes.



In June 2012, the reclamation contract was bid competitively and awarded to Alpha Reclamation of Pikeville, Kentucky with a bid of \$406,276. To date, Alpha Reclamation has done much to improve the conditions of the site including earthwork grading, removal of silt ponds and construction of limestone rocked ditches. Alpha is also finishing the last acre and a half of cross-ripping and is on track to begin tree planting in March, 2013.

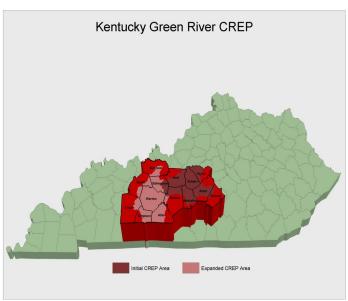
### Green River Conservation Reserve Enhancement Program By Jay Nelson, Division of Conservation



Photo courtesy of USDA-Natural Resources Conservation Service

On Aug. 29, 2001, the U.S. Department of Agriculture (USDA) and the Commonwealth of Kentucky agreed to implement a Conservation Reserve Enhancement Program (CREP) on a section of the Green River watershed that includes 917,197 acres in the counties of Adair, Barren, Edmonson, Green, Hart, Metcalfe, Russell and Taylor. This CREP was meant to restore up to 100,000 acres containing high levels of sediment, nutrients, pesticides and pathogens in order to protect the Green River and Mammoth Cave systems. The Kentucky Division of Conservation, the Kentucky Department of Fish and Wildlife Resources, Kentucky Division of Forestry, The Nature Conservancy and Western Kentucky University were among key state agencies/non-profits putting this program on the ground and monitoring progress.

The basic premise of the program is that it is a voluntary land "set aside" pro-

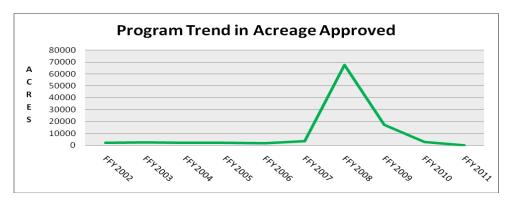


gram in which landowners are paid to convert cropland or pastureland to natural vegetative cover. The vegetative cover may be trees, native warm season (prairie) grasses or a combination thereof. The two priorities of the program are soil erosion control/agricultural waste control and wildlife habitat. For CREP, landowners are paid upfront incentives, cost share on practice installation, and annual rental payments based on acreage and soil type (agricultural productivity potential) over the lifetime of a contract, which lasts 10-15 years.

## Green River Conservation Reserve Enhancement Program Continued by Jay Nelson, Division of Conservation

Because the section of the Green River has been identified as such a special place, partner agencies felt that the enhanced version of the Conservation Reserve Program (CRP) would be ideal for this area. This "enhancement" is primarily financial, thus directly benefiting the producer/landowner in CREP areas (for example, some practices installed under a CREP contract can pay up to a 100 percent increase over standard CRP rental payments for the same practice). This is an entirely voluntary land "set aside" program; offering enhanced annual rental, cost share and incentive payments that exceed that of CRP. In addition to the payments referenced above, landowners may elect to enter this land into a supplemental permanent conservation easement to receive additional incentive payments. Practices most commonly utilized in the Green River CREP region include sinkhole buffers, riparian buffers, native grass planting, hardwood tree planting and filter strips.

CREP allows for generic national specifications to be enhanced to better fit a more local, unique natural resource. A good example of this is the karst terrain in south central Kentucky. While the Green River CREP's objectives included sinkhole and groundwater protection, there was no specific practice included in the initial proposal in which sinkholes could be effectively buffered in pastureland. Through research and outreach to other states with similar programs, it was discovered there was a practice available, and that practice was brought into the Green River CREP in the 2006 amendment. Even though this practice was brought in midway through the program, it ended up accounting for 72 percent of the total acreage enrolled, showing the importance of the ability to tailor a program to a specific area and specific resource. The following charts show the success our amendment played in the success of this program.





### Green River Conservation Reserve Enhancement Program Continued by Jay Nelson, Division of Conservation

The USDA Conservation Reserve Program (CRP) has been the federal government's largest, most comprehensive private lands environmental improvement program. CRP and CREP help save millions of acres of topsoil from erosion and protect surface and ground waters by reducing runoff and sedimentation, increasing wildlife habitat and improving air quality.

As of the fall of 2009, all 100,000 acres allotted for this program had been utilized. Due to some contract cancellations, the final enrolled acreage is 99,595 acres. CREP was a great opportunity for both the natural resources and landowners of this region. The success of the Green River CREP in this small, rural area of south central Kentucky truly represents what this program was designed to do. The program started out rather slowly as compared with some other states that had already established CREP programs of their own. Partner agency personnel identified gaps in CRP program policy and design with the local geographic and land use characteristics and created an amendment that truly embodies the intent of CREP. This is evident with the accomplishments in the more recent years of the program. The enrollment data and conservation benefits speak for themselves. It is hoped that the practices installed, and economic influence of this program to our area will have positive benefits for decades to come.

For more detailed information on this program, please visit the Kentucky Division of Conservation website (http://conservation.ky.gov/Pages/GreenRiverCREP.aspx).



### Forests Contribute Nearly \$10 Billion to Kentucky's Economy By Diana Olszowy

During the 93rd annual meeting of the Kentucky Farm Bureau Federation in Louisville, Dr. Jeffrey W. Stringer, hardwood Silviculture professor with the University of Kentucky's (UK) Department of Forestry, announced the findings from an economic impact study on the forest and wood industry impact to Kentucky's economy.

The study was developed by UK's Departments of Forestry and Agricultural Economics and includes current marketing trends, timber prices and an economic outlook for 2013.

According to the study results, Kentucky's forest industries:

- Contributed \$6.357 billion by including all indirect wood-related industries, a total of \$9.992 billion was added to the state's economy in 2012.
- Provided 51,928 jobs (2.7 percent of Kentucky's total employment) with 24,262 directly employed by the wood/paper and logging industries.
- Provided employment opportunities in 109 of the 120 counties.
- Provided \$1.25 billion in wages in 2012.
- Ranked in the top three nationally in hardwood production and are ranked first in the South for sawlog and veneer production.

According to Dr. Stringer, Kentucky's forests (75 percent) remain largely in private hands. While Kentucky's forests provide significant economic and environmental benefits, they continue to grow at a rate faster than they are being removed.

"Woodland owners and forest industries provided Kentucky with a significant source of revenue with \$6.3 billion distributed across the Commonwealth. When spent throughout the economy it created nearly \$10 billion in total impact. Since timber is grown in every county, and wood industries exist in 109 counties, the forestry sector is important to both rural and urban economies," said Dr. Stringer. "This revenue is also important to those agencies, industries, organizations and landowners who comprise the forestry sector.

"Many provided information and data used in the report, and the authors especially



thank the Kentucky Division of Forestry and members of the Kentucky Forest Industry Association for their assistance," he added.

Statewide averages show Kentucky's forests are growing twice as much volume than is being harvested or lost to mortality annually. Timber prices of many species continue to fluctuate with some markets starting to stabilize, including the pulpwood, railroad tie and the stave markets.

### Forests Contribute Nearly \$10 Billion to Kentucky's Economy Continued by Diana Olszowy

The study forecasts an overall mixed outlook for 2013:

- Markets for logs to saw into boards are expected to stabilize.
- Secondary industries making products from the sawn lumber are expected to stabilize and possibly increase slightly.
- Pulpwood markets are expected to stabilize further and a regional moderate increase in sawtimber is expected.
- Cash receipts for timber owners should increase slightly.
- Employment opportunities are not expected to increase.
- Housing markets increased somewhat in the third quarter of 2012 and more growth is expected.
- Demand for certified pulpwood and sawlogs (those designated as being grown sustainably by an independent third party system) is expected to increase.
- Insects and disease problems will continue to be monitored (e.g. emerald ash borer) and may have an effect on markets or prices for those species effected.
- Budget and personnel cuts for the Kentucky Division of Forestry (KDF) are an immediate and long-term concern and will reduce the amount of professional technical assistance available for forestland owners.

The study included an input-output analysis of Kentucky's forest products industry using Impact Analysis for Planning. Additional data was analyzed from a variety of government sources including the USFS Forest Inventory and Analysis (FIA), Timber Product Output (TPO) programs and the KDF's Growing Gold quarterly marketing report.

"The Division of Forestry collects the data for the FIA and TPO programs that provides critical information on the overall health, species quantity, quality and distribution of trees across the state. These data are important to Kentucky's wood-using industries and es-

sential to ensure that Kentucky's forests continue to provide economic, environmental and social benefits to its citizens," said Leah W. MacSwords, director of the KDF.

"This report is the product of significant work and collaboration among our faculty and staff, our partners associated with the forestry sector in Kentucky, and our agricultural economics colleagues at UK. We expect it will be a valuable tool for those who own, manage, or utilize the Commonwealth's forest resources. It



will also be a valuable tool for planning and policy development. We hope not only to offer this report annually, but also deepen the analyses in coming months and years to better understand a very important sector of Kentucky's economy," said Dr. Terrell Baker, chair of UK's Department of Forestry.

For more information, please contact the Kentucky Division of Forestry at 502-564-4496 or Dr. Stringer at 859-257-5994.

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